



Conclusions  
and  
Recommendations





## CONCLUSIONS

### *1. Texas' Potential for Growth*

Texas has the capability for great population growth and industrial and agricultural expansion, provided adequate water supplies of suitable quality can be made available at reasonable and equitable costs. With ample supplies of water, it is anticipated that the population of Texas in 2020 will have grown to 30,500,000, more than 3 times the population in 1960. Corresponding industrial and agricultural expansion to support this growth is expected to occur.

If adequate water supplies are not available in time, however, this future population growth and economic development will be severely curtailed. Agricultural production in the western half of the State must inevitably decline, with Statewide adverse economic impact, particularly to the associated agribusiness and financial interests in the major metropolitan centers.

For example, supplemental water supplies must be made available in the following areas no later than the dates shown:

San Antonio area (municipal and industrial)—1985  
Corpus Christi area (municipal and industrial)—1987  
El Paso area (municipal, industrial,  
and irrigation)—2000\*  
High Plains (irrigation)—1985  
Trans-Pecos area (irrigation)—1990  
Lower Rio Grande Valley (municipal, industrial,  
and irrigation)—1980

If this time schedule can be met, water needs in other areas of the State can and will be adequately met. To meet this schedule, however, coordinated and cooperative action in planning, feasibility studies, authorization, financing, design, and construction among all levels of government is essential.

### *2. Water Resources Now Available to Texas*

Water supplies can be developed to meet all reasonably foreseeable long-term intrabasin needs and provide surpluses for interbasin transfers under the Texas Water Plan in the Lower Red, Sulphur, Cypress Creek, Sabine, and Neches River Basins. Some interim

surpluses will exist in the Guadalupe-San Antonio River Basins and possibly in the Trinity River Basin. Pending full development of the intrabasin needs, the surpluses available for interbasin transfers on an interim basis will be substantially larger.

These water resources available to Texas from intrastate sources and from interstate sources flowing along or across the State boundaries are grossly inadequate to meet the future water needs of the State.

### *3. Importation From Out-of-State*

Importation of water from out-of-State sources is essential to the future development of Texas, and must begin no later than 1988. Planning indicates that by 2020 as much as 12 to 13 million acre-feet per year may need to be imported. Planning estimates indicate that water of suitable quality, in these quantities, can be made available from the Lower Mississippi River.

Such estimates are based on full consideration of the needs of the Mississippi River Basin States now, and in the future, including maintenance of quality and navigation. It is also planned that any project for exportation of Mississippi River water would yield benefits to the exporting State(s), as well as to Texas and New Mexico. Further, this source appears to offer the most economic benefits. In light of these factors the assumption has been made that water could be made available to meet Texas' requirements, and planning has proceeded on this basis.

It is probable that additional importation of water from some source may be required by 2020.

### *4. The Texas Water Plan*

The Plan, the most extensive and complex water resource System yet conceived, is the most effective and economic means for meeting the future water needs of Texas for all purposes on a Statewide basis.

\* Needed whenever can be made available. Year 2000 projected in present planning as earliest feasible data for delivery.

## *5. Participation by the State of Texas*

The State must be a major participant with Federal and local agencies in planning, feasibility studies, financing and design, and in operation, maintenance, and management of the Texas Water System in order that the State's interest in its resources may be fully protected.

## *6. Cost*

The cost of construction of the Texas Water System, at current construction cost levels, exclusive of out-of-State facilities for importation and appurtenant irrigation distribution systems, is estimated at about \$6.3 billion. Irrigation distribution systems, a local responsibility, are estimated to cost \$250-300 per acre to be irrigated.

These expenditures will be spread over a period of 50 years, with most of the capital costs incurred between fiscal years 1975 and 1990. The anticipated rate of cost escalation will be a significant factor in long-range financing planning.

## *7. Acreage Limitation*

The present acreage limitation provisions of Federal Reclamation Law will need to be revised if the State is to have an economically viable agriculture in Texas under Reclamation projects.

## *8. Economic Justification and Financial Feasibility*

The Texas Water System, including import from out-of-State sources, is economically justified on the basis of reconnaissance level studies. The financial resources of the irrigation areas to be served appear to be adequate to repay their share of the costs under current Federal repayment policies through water charges or a combination of water charges and general taxation.

# RECOMMENDATIONS

The Board recommends that the following actions be taken by the Governor and Legislature of the State of Texas, the President and the Congress of the United States, and local governmental agencies:

THAT THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF TEXAS:

1. Adopt a plan for financing the State's share of the cost of the Texas Water System as a joint Federal, State, and local partnership undertaking and to provide additional financial

assistance to local political subdivisions for water supply projects; such plan to be submitted for approval by the voters at the 1970 general election.

2. Amend the Texas Water Development Fund Act to:

- (1) Eliminate the present provision for termination in 1982 of Texas Water Development Fund investments.
- (2) Remove the present limitation on the total amount of the Water Development Fund, the limitation on the permissible investment in a single project, and the limitation on the maximum aggregate investment in reservoir conservation storage facilities.
- (3) Remove the limitation on the coupon interest rate for Water Development Fund bonds from the present maximum of 4%.

3. Empower the Board to implement the Texas Water Plan, including authority to:

- (1) Participate in partnership with the United States Government, pursuant to appropriate statutory and contractual arrangements, in the design, construction, operation and maintenance, and management of the Texas Water System; such participation to be on the basis of ownership by the State of an undivided interest in the total System.
- (2) Enter into contracts with Federal, or with Federal-State agencies, to purchase water from out-of-State sources delivered at the State line.
- (3) Enter into cooperative agreements with the United States, local public agencies, and investor-owned utilities for financing, constructing, and operating facilities to generate and deliver pumping energy required for the Texas Water System.
- (4) Acquire by eminent domain lands necessarily required for water development project purposes proposed in the Texas Water Plan.
- (5) Preserve lands necessarily required for water development project purposes

proposed in the Texas Water Plan under terms providing equitable return to the landowner.

- (6) Use lands necessarily acquired for project purposes prior to initiation of construction, and on an interim basis. Purpose of use would include leasing for agricultural use, leasing for recreational development, or development cooperatively with the Parks and Wildlife Department for wildlife and fishery management, or for other purposes not inconsistent with ultimate reservoir development. Since acquisition of lands by the State removes the tract from local tax rolls, lease contracts may contain provision for contribution by the lessee to units of local government, of an amount equivalent to former ad valorem taxes or special assessments.
- (7) Act as sponsor of water development projects proposed for Federal authorization when the Board is acquiring storage in a reservoir project as a part of the Texas Water System, or when a local sponsor is not available for a needed water development project, whether or not it is a part of the Texas Water System.
4. Amend Article 7470 which lists the purposes for which water may be appropriated, by adding a provision to authorize the appropriation of water for other beneficial uses which may be defined from time to time in Rules and Regulations of the Texas Water Rights Commission, to enable the Commission to consider the allocation of waters of the State for water quality control purposes, mosquito control, fish and wildlife, maintenance of fresh water inflows to the bays and estuaries, and such other purposes as it may deem beneficial to the State. Many of these uses are already specifically included as project purposes in the Federal reservoirs in Texas.
5. Provide additional funds to the Texas Water Quality Board, under its authorized program of State grants for planning and constructing sewage collection and treatment systems, by establishing a Texas Clean Water Fund to complement the construction grant provisions of the Federal Water Pollution Control Act as amended.
6. Establish a Texas Water Projects Recreation Fund, to be administered by the Parks and Wildlife Department as a part of its long-range recreation plan for Texas, to provide the funds in excess of those available from user fees necessary to repay the reimbursable Federal investment allocated to recreation, and to enhancement of fish and wildlife resources under the Federal Water Project Recreation Act, to provide on-shore facilities and to operate and maintain such facilities for elements of the Texas Water System.
7. Provide adequate funds for the concerned State agencies, designating specific inter-agency responsibilities, to complete comprehensive studies of the bays and estuaries and to prepare recommendations for Legislative consideration for long-range conservation of these resources.
8. Establish State policy as to the degree of State responsibility for the costs associated with providing fresh water inflows to the bays and estuaries to complement Federal policy when established; appropriate funds, or establish other funding procedures for payment of those costs; and designate the responsible State agency for administering such funds.
9. Mitigate the effects of the influx of workers for construction of the facilities of the Texas Water System upon communities which must provide school, police, fire, hospital, and other services for those workers during the period of construction; adopt a formula for assessing those effects; and make funds available to assist such communities in defraying the short-term costs of providing these additional local services where such mitigation is not a Federal responsibility.
10. Authorize creation of master districts for purposes of contracting for purchase of water under the Texas Water System; such districts to be created where needed and as local interests reach agreements on the areas to be encompassed.
11. Establish and fund a program to be administered by the Texas Parks and Wildlife Department to designate and preserve river reaches and springs of historic, scenic, and scientific value to complement and supplement Federal legislation.
12. Appropriate to the Board adequate funds to carry out its duties and responsibilities for future water development in Texas in a timely manner as shown on Plate 1.

THAT THE PRESIDENT AND THE CONGRESS  
OF THE UNITED STATES:

1. Continue to fund the feasibility level studies now being conducted by the U.S. Bureau of Reclamation and U.S. Corps of Engineers of the import to Texas of surplus water from the Mississippi River and its conveyance to points of need within Texas and adjacent States, and approve the concept of such importation as soon as agreement has been reached among the non-Federal interests involved.
2. Accept and implement the concept of Federal-State relationships with responsibilities at both levels of government generally as defined in this Plan for the planning, design, financing, construction, operation, maintenance, and administration of the Texas Water System and other projects of the Texas Water Plan.
3. Recognize the Texas Water Plan and subsequent modifications as the general guide for future water and related land resource development in Texas.
4. Authorize the Texas Water System and its projects, and appropriate funds for engineering and construction of elements of the Texas Water System upon submission of feasibility and survey reports, so that the time schedule presented herein for the Texas Water Plan may be met.
5. Authorize the Corps of Engineers and the Bureau of Reclamation to enter into contracts with the State of Texas as the principal contracting agent for repayment to the United States of the reimbursable Federal costs allocated to water supply incurred in the design and construction of the facilities of the Texas Water System, with the State of Texas securing its obligations under such contracts through ancillary repayment contracts executed by the State with local political subdivisions.
6. Amend the provisions of Federal Reclamation Law relating to acreage limitations so that economically productive farming units can be developed or sustained under Reclamation projects.

7. Establish policy as to the national interest in protection of the coastal bays and estuaries and the criteria for evaluating benefits and detriments to the bays and estuaries from water and related land resource development.
8. Empower Federal construction agencies, for reservoir and water conveyance projects authorized now or in the future, to:
  - (1) Immediately acquire necessary interests in project lands and take necessary actions to preserve the future project sites from encroachment.
  - (2) Enter into agreements with the State of Texas and local agencies to provide for credit or reimbursement for the costs of lands acquired, land-taking surveys made, or other project costs incurred by the State or local agencies when such expenditures are sound contributions to the projects.

THAT LOCAL INTERESTS:

1. Take steps immediately to form master districts, where necessary, covering the areas which desire to be supplied with water for irrigation and other purposes under the Texas Water System, with adequate powers to contract with the State of Texas or the United States for a water supply and other purposes; to raise the revenues necessary to repay the reimbursable costs involved; and to accomplish the other actions necessary to put the water to beneficial use in the most effective manner.
2. Examine the desirability of forming, and form where feasible, regional organizations or entities such as a metropolitan water district covering major metropolitan areas in order to minimize the cost of treating and distributing water supplied through the Texas Water System.
3. Examine the legal authority of the local and regional agencies to participate in the Texas Water Plan with the Federal and State agencies, and where such authority is lacking, seek authorization from the Legislature.

4. Immediately undertake studies of the amounts and timing of supplemental water to be contracted for under the Texas Water System, the point(s) of delivery, and the necessary legal and financial arrangements to assure the capability of meeting the contractual repayment obligations. Initiation of these studies should not await the formation of master districts or regional organizations.
5. Expand, in cooperation with Federal and State agencies, programs of basic data collection and planning.
6. Cooperate in further planning for the Texas Water Plan and in preparation of feasibility reports for elements of the Plan.
7. Cooperate with the Board in preparing and presenting unified programs to the Federal agencies and the Congress for Federal authorization and appropriations.



## GLOSSARY OF TERMS

Some of the terms used in this document have a restricted meaning or may not be familiar to the general reader, and are therefore described below. Included in the glossary is a diagram showing selected distinctive geographic areas.

*Acreage limitation.*—Under Federal Reclamation Law, water from a project thereunder generally cannot be furnished to irrigable lands in excess of 160 acres in single ownership, or 320 acres held in joint ownership by a husband and wife, unless the owner agrees to dispose of the excess land within 10 years under terms and conditions satisfactory to the Secretary of the Interior.

*Acre-foot.*—The volume required to cover 1 acre to a depth of 1 foot. Equivalent to 325,851 U.S. gallons or 43,560 cubic feet.

*Aquifer.*—A geologic formation, group of formations, or part of a formation that is water bearing. The term is usually restricted to water bearing units capable of yielding water in sufficient quantity for a usable supply.

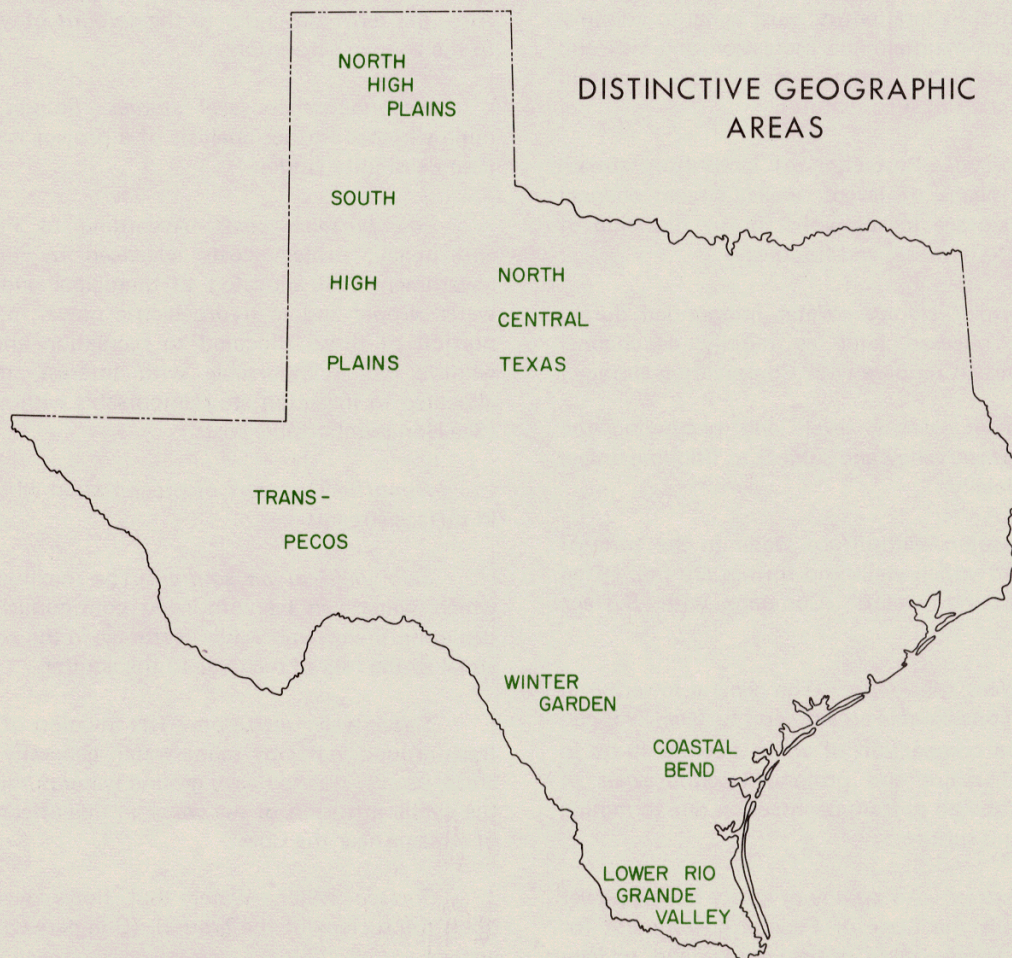
*Artesian aquifer, artesian pressure.*—Artesian pressure occurs where an aquifer is overlain by rock of lower permeability (such as clay) so that the water is confined under pressure greater than atmospheric. In a well penetrating an artesian aquifer, water will rise above the level at which it is encountered; it may or may not rise sufficiently to flow at the ground surface.

*Base flow.*—The sustained low flow in a stream, supplied by ground water discharge.

*Brackish water.*—Water that is undrinkable due to excessive mineral content, although not as mineralized as sea water.

*Conservation storage.*—Water impounded for later release or withdrawal for beneficial uses. (Compare with Flood-control storage.)

*Dead storage.*—That part of a reservoir capacity below the lowest outlet level from which water can be released by gravity flow.





*Eutrophication.*—The process of nutrient enrichment in waters of lakes, reservoirs, and estuaries, commonly accompanied by an increase in algae and depletion of dissolved oxygen in the water.

*Feasibility studies.*—Studies to determine the technical, economic, and financial feasibility of a project. In the case of Federal projects, feasibility studies are necessary to support Congressional authorization for project design and construction. These studies are generally made following reconnaissance level studies.

*Federal Water Pollution Control Act.*—The purpose of the Act is to enhance the quality and value of the Nation's water resources and to establish a national policy for the prevention, control, and abatement of water pollution. Under it, the Secretary of the Interior is empowered, after consultation with the States, to establish water quality criteria for the streams, rivers, and other bodies of water in the United States. Federal agencies are required to consult with the Secretary concerning the effects of construction of Federal projects on water quality.

*Federal Water Project Recreation Act.*—The Act recognizes recreation and fish and wildlife as purposes in the planning and construction of multiple-purpose water development projects. Under the cost-sharing provisions of the Act, a non-Federal entity must agree to administer, operate, and maintain the recreation and fish and wildlife features of the project, and to pay a certain portion of the costs of such features.

*Flood control.*—Protection of lands from stream overflow, by means of levees, walls, stream channel modification, storage in reservoirs, or by diversion of flood waters into bypasses and floodways.

*Flood-control storage.*—Water impounded during floods to be released later as rapidly as channel capacities permit. (Compare with Conservation storage.)

*Flood plain.*—Nearly level land occupying the bottom of a stream valley and subject to flooding unless protected artificially.

*Ground water.*—Subsurface water in the zone of saturation, from which wells and springs are fed. Often called underground water. (Compare with Surface water.)

*Land surface subsidence.*—The general lowering in elevation of a considerable area of land surface. This can result from the compaction of water bearing strata in some areas of major and prolonged withdrawals of ground water, as well as from compaction due to mining of petroleum and sulfur.

*Master district.*—An agency or entity having power to contract with the State or Federal government for repayment of reimbursable project costs, and to levy

taxes or make water charges to assure repayment of these costs.

*Mine-mouth generating plant.*—An electrical power generating plant which is located where the fuel (usually coal) is mined.

*Non-reimbursable costs.*—According to Federal law and policy, project costs advanced by the Federal government and allocated to purposes such as flood control and navigation, the more direct or immediate beneficiaries of which cannot be readily identified, are non-reimbursable. (See Reimbursable costs.)

*Nuclear generating plant.*—An electrical power generating plant in which the source of heat energy is nuclear fuel. (See Thermal generating plant.)

*Ogallala Formation, Ogallala Aquifer.*—The Ogallala Formation covers most of the High Plains of Texas—about 35,000 square miles. The water saturated part of the formation, called the Ogallala Aquifer, is the principal source of usable water supply in this area.

*Recharge of ground water.*—The process by which water enters the zone of saturation in a geologic formation, either naturally, as by rainfall or seepage from streams and lakes, or artificially, as through wells. Also, the term may refer to the amount of water added to the zone of saturation.

*Reconnaissance level studies.*—Studies to determine whether further analysis of a project is warranted. (See Feasibility studies.)

*Reimbursable costs.*—According to Federal law and policy, project costs advanced by the Federal government and allocated to municipal and industrial water supply and to hydroelectric power, as well as a portion of those allocated to recreation and fish and wildlife, are reimbursable with interest; those costs allocated to irrigation are reimbursable without interest. (See Non-reimbursable costs.)

*Runoff.*—That part of precipitation which appears in surface streams.

*Safe yield of an aquifer.*—The maximum rate at which water can be withdrawn continuously without depleting the ground water in storage in the aquifer. It is equal to the rate of recharge to the aquifer.

*Saline water intrusion.*—The invasion of a body of fresh ground water by saline water, generally in coastal areas, usually due to heavy ground water pumpage. Also, the cyclic intrusion of sea water in tide-affected reaches of streams near the Coast.

*Surface water.*—Water that flows over or rests upon the surface of the ground. (Compare with Ground water.)



*Terminal regulating storage.*—Water stored in a terminal reservoir after conveyance so that fluctuating demands for water can be met despite varying rates of supply.

*Thermal generating plant.*—An electrical power generating plant in which the source of heat energy is coal, lignite, or natural gas. (See Nuclear generating plant.)

*Water service contract.*—A contract whereby water is furnished for municipal, irrigation, or other purposes at rates sufficient to produce revenues that will cover reimbursable costs.

**Table 1.--Incremental Capacities of Reservoirs, Existing or Under Construction**

**Storage Capacity in 1,000 Acre-Feet**

BASIN & RESERVOIR	FLOOD CONTROL	CONSERVATION	DEAD	TOTAL
<b>CANADIAN—</b>				
Rita Blanca	0.0	12.1	0.0	12.1
Meredith	544.0	821.0	0.0	1,365.0
<b>RED—</b>				
Bivins	0.0	5.1	0.0	5.1
Buffalo	0.0	18.1	0.0	18.1
Greenbelt	0.0	50.3	9.5	59.8
Baylor Creek	0.0	9.2	0.0	9.2
Kemp	200.0	245.8	80.2	526.0 <sup>5/</sup>
Diversion	0.0	40.0	0.0	40.0
Santa Rosa	0.0	11.6	0.0	11.6
Buffalo Creek	0.0	13.8	1.1	14.9
Kickapoo	0.0	98.0	8.0	106.0
Wichita	0.0	11.1	3.0	14.1
Arrowhead	0.0	211.5	16.5	228.0
Farmers Creek	0.0	20.3	5.1	25.4
Moss	0.0	21.6	1.6	23.2
Texoma	2,615.0	1,730.0	1,047.0 <sup>1/</sup>	5,392.0
Randall	0.0	5.4	—	5.4 <sup>2/</sup>
Brushy Creek	0.0	6.2	10.6	16.8 <sup>2/</sup>
Timber Creek (Bozham Lake)	0.0	12.0	1.0	13.0
Coffee Mill Creek	0.0	10.0	0.0	10.0
Pat Mayse	64.6	124.5	4.6	193.7
Crook	0.0	7.2	0.0	7.2
<b>SULPHUR—</b>				
River Crest	0.0	7.2	0.0	7.2 <sup>2/</sup>
Texarkana	2,509.0	145.3	0.0	2,654.3
<b>CYPRESS—</b>				
Franklin County (Big Cypress Creek)	0.0	71.8	1.2	73.0
Ellison Creek	0.0	23.9	0.8	24.7
Johnson Creek	0.0	10.1	0.0	10.1
Lake O' the Pines	587.2	243.2	11.7	842.1
Caddo	0.0	136.5	38.5	175.0
<b>SABINE—</b>				
Tawakoni	0.0	907.2	29.0	936.2
Holbrook	0.0	7.8	0.2	8.0
Quitman	0.0	7.4	0.0	7.4
Hawkins	0.0	10.0	0.3	10.3
Winnsboro	0.0	6.6	0.0	6.6
Gladewater	0.0	6.2	0.7	6.9
Cherokee	0.0	43.6	3.1	46.7
Murvaul	0.0	43.7	2.1	45.8
Toledo Bend	0.0	3,790.8	686.2 <sup>4/</sup>	4,477.0
<b>NECHES—</b>				
Flat Creek	0.0	27.0	5.8	32.8
Palestine Enlargement <sup>6/</sup>	0.0	401.4	8.6	410.0
Tyler (Including Tyler East)	0.0	85.5	1.9	87.4
Jacksonville	0.0	29.8	0.7	30.5
Striker Creek	0.0	23.9	2.8	26.7
Kurth	0.0	16.2	0.0	16.2 <sup>2/</sup>
Sam Rayburn	1,148.9	1,400.6	1,452.0 <sup>1/</sup>	4,001.5
B. A. Steinhagen	0.0	40.3	28.4	68.7
<b>TRINITY—</b>				
Amon G. Carter	0.0	16.0	4.0	20.0
Bridgeport	0.0	396.1	37.0	433.1
Eagle Mountain	0.0	135.5	47.2	182.7
Worth	0.0	30.6	3.0	33.6
Weatherford	0.0	15.2	4.4	19.6
Benbrook	76.5	77.5	10.8	164.8
Arlington	0.0	43.0	2.7	45.7
Walnut Creek	0.0	2.9	1.1	4.0
Mountain Creek	0.0	11.2	15.9	27.1
Garza-Little Elm	520.9	481.8	0.2	1,002.9
North	0.0	17.0	0.0	17.0



Table 1.--Incremental Capacities of Reservoirs, Existing or Under Construction--Continued

BASIN & RESERVOIR	FLOOD CONTROL	CONSERVATION	DEAD	TOTAL
TRINITY (Cont'd.)—				
Grapevine	238.3	165.1	23.4	426.8
White Rock	0.0	8.2	4.1	12.3
Lavon Enlargement	412.5	95.8	47.8	556.1
Ray Hubbard	0.0	483.7	6.3	490.0
Trinidad	0.0	7.8	0.0	7.8 <u>2/</u>
Terrell	0.0	7.3	1.0	8.3
Joe B. Hogsett	0.0	661.1	17.9	679.0
Turkey Creek	0.0	3.6	1.1	4.7
Waxahachie	0.0	12.6	1.0	13.6
Bardwell	79.6	49.5	5.4	134.5
Halbert	0.0	6.6	0.9	7.5
Navarro Mills	143.2	53.2	7.7	204.1
Houston County	0.0	18.8	0.8	19.6
Livingston	0.0	1,675.0	75.0	1,750.0
Wallisville	0.0	46.7	12.4	59.1
Anahuac	0.0	35.3	0.0	35.3 <u>2/</u>
SAN JACINTO—				
Conroe	0.0	420.5	9.8	430.3
Houston	0.0	116.7	41.6	158.3
Sheldon	0.0	5.4	0.0	5.4
Addicks	204.5	0.0	0.0	204.5
Barker	207.0	0.0	0.0	207.0
BRAZOS—				
Buffalo Springs	0.0	5.4	0.0	5.4
White River	0.0	36.4	1.8	38.2
Sweetwater	0.0	8.2	3.7	11.9
Abilene	0.0	8.0	1.8	9.8
Kirby	0.0	4.8	2.8	7.6
Fort Phantom Hill	0.0	67.0	7.3	74.3
Stamford	0.0	47.6	12.4	60.0
Hubbard Creek	0.0	277.8	40.0	317.8
Daniel	0.0	3.0	7.0	10.0
Cisco	0.0	6.5	2.4	8.9
Leon	0.0	17.5	9.8	27.3
Graham	0.0	47.0	5.6	52.6
Possum Kingdom	0.0	188.1	536.3	724.4
Palo Pinto Creek	0.0	39.5	4.6	44.1
Mineral Wells	0.0	5.0	3.4	8.4
DeCordova Bend	0.0	105.4	44.6	150.0
Proctor	314.8	37.5	21.9	374.2
Pat Cleburne	0.0	18.3	7.3	25.6
Whitney	1,372.4	381.9	245.2 <u>1/</u>	1,999.5
Waco	553.3	104.1	69.0	726.4
Belton	640.0	398.5	59.1	1,097.6
North San Gabriel <u>5/</u>	87.6	29.2	14.0	130.8
Laneport <u>5/</u>	162.2	37.9	44.1	244.2
Stillhouse Hollow	394.7	218.2	17.5	630.4
Lake Creek	—	—	—	—
Mexia	0.0	0.0 <u>3/</u>	10.0	10.0
Trading House Creek	0.0	37.8	0.0	37.8
Camp Creek	0.0	7.7	0.9	8.6
Alcoa	0.0	10.5	0.0	10.5
Somerville	347.4	16.0	9.2	372.6
Smithers	0.0	18.0	0.0	18.0
William Harris	0.0	11.1	0.9	12.0 <u>2/</u>
Eagle Nest--Manor Lake	0.0	18.0	0.0	18.0
Brazoria	0.0	21.3	0.7	22.0 <u>2/</u>
COLORADO—				
J. B. Thomas	0.0	172.1	31.6	203.7
Colorado City	0.0	21.6	9.4	31.0
Champion Creek	0.0	36.8	5.8	42.6
Robert Lee	0.0	454.8	34.0	488.8
Oak Creek	0.0	34.5	4.8	39.3
San Angelo	277.2	107.0	12.2	396.4
Twin Buttes	454.4	171.9	14.3	640.6
Nasworthy	0.0	12.4	0.0	12.4
Coleman	0.0	36.9	3.1	40.0
Hords Creek	0.0	8.5	0.2	8.7
Brady Creek	0.0	28.6	0.5	29.1
Brownwood	0.0	133.2	10.2	143.4
Buchanan	0.0	756.9	235.2	992.1
Inks	0.0	17.0	—	17.0

**Table 1.--Incremental Capacities of Reservoirs, Existing or Under Construction--Continued**

BASIN & RESERVOIR	FLOOD CONTROL	CONSERVATION	DEAD	TOTAL
<b>COLORADO (Cont'd.)—</b>				
Lyndon B. Johnson	0.0	117.3	21.2	138.5
Marble Falls	0.0	8.8	—	8.8
Travis	778.0	1,172.0	—	1,950.0
Austin	0.0	20.0	1.0	21.0
Decker Creek	0.0	33.9	0.0	33.9
Bastrop	0.0	16.6	0.0	16.6
Eagle Lake	0.0	9.6	0.0	9.6 <sup>2/</sup>
<b>GUADALUPE—</b>				
Canyon	354.7	383.3	2.9	740.9
Dunlap	0.0	3.6	2.4	6.0
McQueeney	0.0	5.0	0.0	5.0
H-4	0.0	5.4	1.3	6.7
<b>SAN ANTONIO—</b>				
Medina	0.0	251.7	2.3	254.0
Victor Braunig	0.0	26.5	0.0	26.5 <sup>2/</sup>
Calaveras Creek	0.0	63.2	0.0	63.2
Olmos	15.5	0.0	0.0	15.5
<b>NUECES—</b>				
Upper Nueces	0.0	7.6	0.0	7.6
Corpus Christi	0.0	259.1	42.9	302.0
<b>RIO GRANDE—</b>				
San Estaban	0.0	18.8	0.0	18.8
Red Bluff	0.0	307.0	3.0	310.0
Balmorhea	0.0	5.9	0.5	6.4
Amistad	1,775.0	3,000.0	550.0	5,325.0
Texas Share	997.6	1,686.0	—	2,683.6
Casa Blanca	0.0	20.0	0.0	20.0
International Falcon				
Summer Storage	909.5	2,112.3	258.9 <sup>1/</sup>	3,280.7
Texas Summer Share	533.0	1,237.8	—	1,770.8
Winter Storage	509.5	2,512.3	258.9 <sup>1/</sup>	3,280.7
Texas Winter Share	298.6	1,472.2	—	1,770.8
<b>COASTAL—</b>				
Big Hill	0.0	32.0	0.0	32.0
Highlands	0.0	5.6	0.0	5.6
Austin	—	—	—	—
Alice Terminal	0.0	7.0	0.0	7.0
Tranquitas	0.0	6.0	0.0	6.0
Monte Alto	0.0	25.0	0.0	25.0
Valley Acres	0.0	7.8	0.0	7.8
Loma Alta	0.0	26.5	0.0	26.5
<b>TOTAL <sup>2/</sup></b>	<b>17,587.9</b>	<b>28,653.4</b>	<b>6,275.7</b>	<b>52,517.0</b>

<sup>1/</sup>Minimum pool for hydroelectric power generation.

<sup>2/</sup>Off-channel reservoir.

<sup>3/</sup>Reservoir will be sedimented by 2020.

<sup>4/</sup>Minimum pool for thermal power generation.

<sup>5/</sup>Land acquisition initiated.

<sup>6/</sup>Land clearing.

<sup>7/</sup>For reservoirs on boundary streams, the total storage (not the Texas share) has been included. For International Falcon the winter storage figures have been included.



**Table 2.--Incremental Capacities of Reservoirs, Proposed and Potential**

**Storage Capacity in 1,000 Acre-Feet**

BASIN & RESERVOIR	FLOOD CONTROL	CONSERVATION	DEAD	TOTAL
<b>RED--</b>				
Lower McClellan Creek	0.0	22.0	106.0	128.0
Lelia Lake Creek	0.0	17.2	3.0	20.2
Sweetwater Creek	0.0	49.2	16.5	65.7
Ringgold	0.0	413.1	19.9	433.0
Bonham (Bois D'Arc)	48.5	75.1	7.0	130.6
Big Pine	54.7	77.9	6.0	138.6
Pecan Bayou	52.4	564.3	8.3	625.0
Liberty Hill	0.0	89.8	7.9	97.7
Barkman Creek	0.0	10.8	5.1	15.9
<b>SULPHUR--</b>				
Cooper	127.5	273.0	9.3	409.8
Parkhouse I	0.0	548.2	87.2	635.4
Parkhouse II	0.0	750.1	96.9	847.0
Naples (Initial)	0.0	1,466.5	135.8	1,602.3
(Ultimate)	701.7	2,220.0	190.0	3,111.7
Texarkana Enlargement	1,687.7	802.9	125.8	2,616.4
<b>CYPRESS--</b>				
Titus County	0.0	311.3	2.9	314.2
Marshall	0.0	775.0	7.3	782.3
Black Cypress	0.0	820.0	4.4	824.4
Caddo Enlargement	0.0	213.5	38.5	252.0
<b>SABINE--</b>				
Mineola	674.5	370.1	20.4	1,065.0
Lake Fork	413.2	621.5	18.9	1,053.6
Big Sandy	163.7	215.3	6.9	385.9
Kilgore No. 2	0.0	14.0	1.0	15.0 <sup>1/</sup>
Cherokee No. 2	0.0	110.6	1.7	112.3 <sup>1/</sup>
Carthage	636.6	456.5	41.0	1,134.1
Bon Wier	124.5	215.3	23.0	362.8
Salt Water Barrier <sup>6/</sup>	—	—	—	—
<b>NECHES--</b>				
Weches	839.7	1,401.7	26.2	2,267.6
Ponta	517.8	805.8	25.5	1,349.1
Rockland	1,502.5	1,789.9	58.9	3,351.3
Salt Water Barrier <sup>6/</sup>	—	—	—	—
<b>TRINITY--</b>				
Bridgeport Enlargement	0.0	396.1	37.0	433.1
Aubrey	258.3	603.8	37.8	899.9
Garza-Little Elm <sup>2/</sup>	331.6	630.6	40.7	1,002.9
Lakeview	136.7	306.4	45.6	488.7
Tennessee Colony	2,187.8	2,044.6	328.6	4,561.0
Bedias	0.0	488.0	16.7	504.7
<b>SAN JACINTO--</b>				
Cleveland	0.0	479.8	4.2	484.0
Lower East Fork	0.0	330.7	7.3	338.0
Lake Creek	0.0	200.0	6.0	206.0
<b>BRAZOS--</b>				
Millers Creek	0.0	7.4	18.1	25.5
Breckenridge	0.0	550.0	67.0	617.0
Stephenville	0.0	40.6	10.9	51.5 <sup>3/</sup>
Aquilla Creek	111.5	59.7	28.1	199.3
Cameron	0.0	1,200.0	18.0	1,218.0
Navasota No. 2	550.7	1,315.4	69.5	1,935.6
Millican	359.0	1,125.8	72.0	1,556.8
South San Gabriel	46.5	30.2	8.0	84.7
<b>COLORADO--</b>				
Stacy	659.3	650.0	50.0	1,359.3
Upper Pecan Bayou	102.7	93.5	10.1	206.3
Clyde	0.0	4.7	1.0	5.7
San Saba	331.6	195.6	5.0	532.2 <sup>4/</sup>
Mason	433.8	319.9	15.2	768.9 <sup>4/</sup>
Pedernales	212.0	233.4	5.0	450.4 <sup>4/</sup>
Columbus Bend	481.7	483.9	88.1	1,053.7
Matagorda	0.0	61.4	28.6	90.0

**Table 2.--Incremental Capacities of Reservoirs, Proposed and Potential--Continued**

BASIN & RESERVOIR	FLOOD CONTROL	CONSERVATION	DEAD	TOTAL
LAVACA-- Palmetto Bend	0.0	230.0	55.0	285.0
GUADALUPE--				
Ingram	36.4	53.5	0.5	90.4
Cloptin Crossing	107.0	146.8	3.2	257.0
Lockhart	0.0	59.9	9.5	69.4
Cuero I and II	843.0	2,816.0	50.0	3,709.0
Confluence	0.0	406.0	33.0	439.0
SAN ANTONIO--				
Cibolo	218.0	172.0	28.0	418.0
Goliad	702.0	958.0	42.0	1,702.0
NUECES--				
Choke Canvon	0.0	686.0	14.0	700.0 <sup>5/</sup>
R & M	0.0	672.4	—	672.4 <sup>5/</sup>
Montell	239.3	1.0	12.0	252.3
Concan	141.2	0.0	7.8	149.0
Sabinal	89.1	0.0	4.2	93.3
COASTAL--				
Garcitas	0.0	63.0	4.0	67.0
TOTAL--	16,124.2	33,616.7	2,383.0	52,123.9

<sup>1/</sup>Potential alternate to obtaining water from Sabine River.

<sup>2/</sup>Capacities after storage exchange with Aubrey Reservoir.

<sup>3/</sup>Potential alternate to obtaining water from Proctor Reservoir.

<sup>4/</sup>Alternate for Colorado River development.

<sup>5/</sup>Alternate for Nueces River development.

<sup>6/</sup>Location and capacity not determined as yet.



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